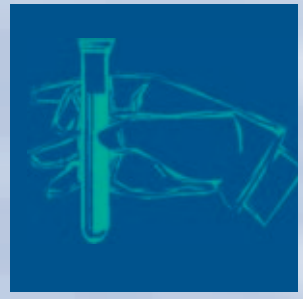
Division of Drinking Water

2002 Annual Report



JULY 2003

Washington State Department of Health

Environmental Health Programs
Division of Drinking Water

Director's Message

"Access to safe drinking water is a cornerstone for public health protection."

I am pleased to present this annual report on the Department of Health Division of Drinking Water's key activities and highlights for 2002. While the division faced many new challenges in 2002, our basic mission remained clearly focused – protecting the health of people of Washington State by ensuring safe and reliable drinking water.

The responsibilities associated with providing safe and reliable drinking water have never been greater. As our communities grow, the population ages, and technology becomes more sophisticated, the challenges steadily increase.

In addition to the growing number of federal rules and new contaminants of concern, in 2002 we faced the new challenge of protecting our water system infrastructure from intentional harm. In the aftermath of the September 11, 2001 terrorist attacks, protection of public drinking water supplies loomed large.

These challenges highlight more than ever our need to work in partnership with communities to provide a safe water supply for people in Washington.

The vision of the Division of Drinking Water includes building and maintaining long-term relationships with those we serve and regulate and working together as a team of competent professionals to create better and more effective ways to protect and promote the public's health. In 2002 the division accomplished much in line with this vision – highlights of which are included in this annual report.

Access to safe drinking water is a cornerstone for public health protection and is essential for a healthy, viable community. We look forward to continuing our work with communities across the state to ensure the provision of this basic health service for all residents and visitors to our state.

Gregg Grunenfelder, Director

Mission:

The mission of the Department of Health Division of Drinking Water is to protect the health of the people of Washington State by assuring safe and reliable drinking water

Vision:

- We have safe and reliable drinking water in Washington State.
- People understand drinking water issues and make informed decisions.
- We create better, more effective ways to protect and promote the public's health.
- Our staff builds and maintains long-term relationships with those we serve and regulate, and are viewed as credible and trustworthy.
- We work together as a team of competent and motivated professionals.
- Our service to the people of Washington State is valued and we are successful.

How We Protect Public Health

To help ensure safe and reliable drinking water, the Division of Drinking Water works in cooperation with over 16,900 public drinking water systems, 34 local health jurisdictions, consulting engineers, consumers, and many other interested parties. Our primary responsibilities include:

Helping water systems respond to emergencies. Most public water systems operate continuously and routinely for many years with no major emergencies that threaten people's health. When emergencies do occur, however, professional staff from the Division of Drinking Water are available for consultation, assistance, and direct action as necessary. Of all the things we do, emergency response has the highest priority.

Maintaining information about water systems. To keep track of the thousands of water utilities in the state, the division maintains electronic data systems with information on water system identification and location, water sources, populations served, treatment methods, water quality, certification of operators, inspections, enforcement actions, construction plans, and other critical topics.

Inspecting water systems. Routine inspections of water systems by the division or qualified designees can identify problems before significant health risks develop. They also help managers understand how to improve their water systems and stay in compliance with regulations.

Monitoring water quality. The division requires all public water systems to sample the water they supply to users and have the samples tested for contaminants at qualified laboratories.

Training and certifying water system operators. Our training and certification activities help to ensure that water systems are run by competent, well-trained people even as changes in technology, industry, and population growth create new challenges for them.

Ensuring regulatory compliance. We keep water systems informed about regulatory requirements, notify them when they are out of compliance, tell them what they must do to get back into compliance, offer appropriate assistance, and take action to enforce compliance when necessary.

Improving water system infrastructure. In partnership with the Public Works Board the division administers a low-interest loan program to help systems construct capital improvements. We also work with systems in the review of construction plans.

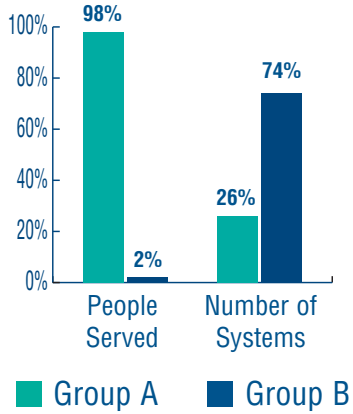
The Division of Drinking Water is organized with headquarters in Olympia and three regional offices in Olympia, Kent and Spokane.

Water Systems in Washington

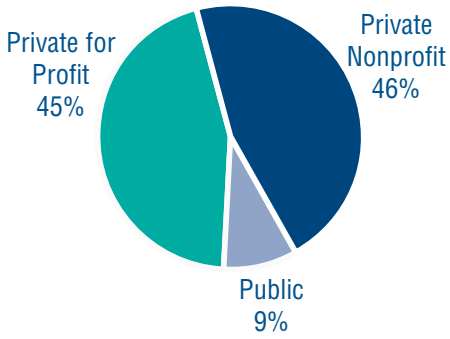
About five million Washington residents get drinking water from more than 16,900 public water systems. The vast majority are served by the 4,300 larger "Group A" systems that must meet federal and state regulations. Another 12,600 smaller state-regulated "Group B" systems serve the remaining two percent of public water system customers.

Ownership of these systems is divided among public and private owners. The nine percent of systems that are publicly-owned (primarily by cities and public utility districts) serve the great majority of customers.

Public Water Systems and Their Customers



Ownership of 16,900 Water Systems in Washington



There are nearly 17,000 public drinking water systems in Washington State. The 4,300 "Group A" systems serve about 85 percent of the population.

2002 Highlights

Water Quality and Health Advisories

Our most important job is preventing illness that could result from bacterial, chemical, or other kinds of contamination in drinking water. Of particular concern are acute illnesses that could result from short-term exposure to contaminants.

Coliform Bacterial Contamination

Coliform bacteria is by far the most common contaminant of concern found in drinking water. In 2002 the division focused on timely response to acute coliform contamination, with the following results:

- In 97 percent of cases, division staff made contact with the water system within four hours of learning that there was a laboratory-confirmed acute coliform finding.
- In 93 percent of cases, the water system notified consumers about the problem within 24 hours.
- In 72 percent of cases, division staff conducted a special purpose investigation within 48 hours.

The division also developed a new coliform health advisory packet to help water systems and local health jurisdictions prepare for this type of response (see "Health Advisories" next page). The packets, containing fact sheets, model communication templates, and other emergency response items, were widely distributed at seminars and workshops and are available on the division's public web site.

In 2002 there were fewer coliform violations of each major type in Washington. Compared to 2001, acute violations (those posing an immediate threat to human health) decreased from 41 to 27. Non-acute violations (those posing a possible or less than immediate risk to human health) dropped from 506 to 418. Major monitoring violations went down from 1080 to 1005. And most impressive, major repeat violations (failure to conduct follow-up monitoring) went from 164 to 74—a reduction of 55%.

The decline in coliform violations in 2002 was a continuation of a downward trend over the past ten years.

Chemical Contamination (Nitrate)

Nitrate is the most common drinking water chemical contaminant of concern in Washington. Because nitrate contamination can have acute health effects on certain people, especially infants, the division stepped up its efforts during 2002 to increase nitrate awareness, public notification, and water system monitoring compliance by Group A water systems. These efforts included:

- Working with laboratories to ensure immediate notification to water systems when a Maximum Contaminant Level (MCL) violation occurs.
- Mailing reminder postcards to water systems that must sample quarterly.
- Publishing articles in the *Water Tap* newsletter to educate systems on how to stay in compliance with monitoring and public notification requirements.
- Informing systems about monitoring violations and the consequences of continued non-compliance.
- Working with systems to solve contamination problems and help them find new sources of safe drinking water.

These efforts paid off. During 2002, annual monitoring compliance by Group A systems required to test for nitrate was 80.8%. Quarterly monitoring compliance (by systems required to test more frequently because a sample exceeded the trigger level of 5 parts per million) increased from 57% to 80% during the year even as the number of systems required to sample quarterly went up 10%.

Only 60 Group A systems (1.8% of the 3,282 systems that took a sample for nitrate during 2002) had an exceedence of the MCL of 10 parts per million. The division is actively working with these systems to mitigate the contamination.

Health Advisories

Health advisories provide advice or recommendations to water system customers on how to protect their health when drinking water is considered unsafe. In 2002 the division responded in a timely manner to 67 water emergencies involving health advisories affecting over 33,000 people. The city of Port Angeles (population 19,005) was the largest area affected.

The coliform health advisory packet (page 3) was a major effort to address the most common cause of health advisories.

During 2002, the division also developed a general manual to help staff effectively manage all water emergencies and associated health advisories. This manual includes expectations for staff response, guidance on making health advisory determinations, and procedures for managing effective communications and other response activities.

Surface Water

During 2002, the number of inadequately treated unfiltered surface sources of drinking water (lakes and streams) in Washington decreased from 18 to 12. Surface water sources are particularly vulnerable to contamination. When systems have inadequately treated unfiltered sources, the division works with them to find solutions such as constructing water treatment facilities, securing ground water sources, or connecting to another system.

The number of surface water monitoring and treatment technique violations was lower in 2002 than in 2001.

Depending on the season, water systems in Washington deliver between one and two billion gallons of potable water every day for less than ½ cent per gallon.

Cross-Connection Control

A cross-connection is a physical connection between drinkable and non-drinkable water or other liquids. Uncontrolled cross-connections can allow drinking water to be contaminated by backflow of hazardous substances such as sewage, fire-fighting chemicals, industrial solvents, and fertilizer.

All public water systems in Washington are supposed to have a program to control cross-connections, but the division has lacked information in the past about the extent of compliance with this requirement. In 2002 we requested data on cross-connection control from the 198 largest Group A systems in the state, 163 of which responded (82 percent). Some of the results:

- 22 systems (13 percent of those responding) said they did not have a cross-connection control program in 2001.

- 45 percent of 8,307 high-hazard premises did not meet backflow protection requirements.
- 27 percent of 1,076 sewage-related facilities did not have required backflow protection.

This new effort at data collection brought some disappointing news, but gave the division valuable information on which to base further efforts to improve compliance with key cross-connection control requirements.

Funding to Improve Water Systems

The division works with drinking water systems to identify needed improvements and find the resources necessary to carry them out. During 2002 the division received over 100 applications—a record number—through the Drinking Water State Revolving Fund program, which provides low interest loans for drinking water capital construction projects. The total amount available in 2002 was $34 million, which funded 44 individual projects.

Many of these projects addressed microbial risks and helped bring systems back into compliance with federal and state regulations.

Washington is a national leader in getting these loan funds out to public water systems. According to the Environmental Protection Agency, Washington is among the top states in the nation in total loans executed, loans to small systems, and loans to privately-owned systems.

Drinking water systems monitor for more than 100 contaminants on a regular basis. The number of contaminants regulated under the Safe Drinking Water Act increased from 23 in 1986 to 103 in 2002, and could reach 130 by 2010.

Enhanced Security

During 2002 the division took action on various fronts to help water systems strengthen security in the aftermath of the September 11, 2001 terrorist attacks, including hiring a security coordinator to work closely with key staff in the Department of Health, agencies outside the department, and water utilities.

We conducted nine regional workshops in January and February on water system security, with a specific focus on terrorism, sabotage, and vandalism. Over 600 people attended the sessions—primarily managers and employees of medium-sized public water systems serving 500 or more connections. The workshops included presentations on emergency planning, threats and targets, biological agents, security measures, incident response, and communications.

The division also responded to several security incidents and sponsored training on vulnerability assessments and emergency response plans to help water systems meet their obligations under the new federal bioterrorism act of 2002.

We communicated with water systems on security issues through a special newsletter, an email listserve, and a security website.

Water system Inspections

State regulations call for routine inspections of all Group A drinking water systems by the division or a qualified designee at least once every five years, with certain exceptions. These inspections, called sanitary surveys, can identify problems and bring action before significant health risks develop. In addition, many water managers find the surveys helpful for understanding how to improve their water systems and stay in compliance with state drinking water regulations.

Historically, the Division of Drinking Water has not been adequately staffed to complete all this work, and so concentrated on the larger systems in order to maximize public health protection. Beginning in 1998 we established a program to help survey smaller non-complex water systems using "qualified sanitary surveyors"—most of whom are employees of local health jurisdictions that have entered into a joint plan of operations with us to conduct the surveys. The Division of Drinking Water remains responsible for follow-up activities when a qualified sanitary surveyor finds deficiencies that pose a high public health risk.

During 2002 there was significant progress. The percentage of systems having had sanitary surveys within the last five years rose from 45 percent to 60 percent. To make this happen, over 920 sanitary surveys were completed—about 270 by division staff and the balance by qualified sanitary surveyors.

During 2002 we established sanitary survey contracts with 30 of 34 local health jurisdictions and trained over 185 people in the skills necessary to become qualified sanitary surveyors.

The division also began a project to inventory and inspect all Group B systems with five to 15 connections, to assess their general condition and degree of compliance with current regulations. Through 31 contracts with local health jurisdictions, over 1,830 site visits were conducted during 2002, and the project continued during the first half of 2003. The inventory of systems resulted in the addition of 127 systems that were previously not identified in the state's data system.

A water system inspection or "sanitary survey" looks at all aspects of water plant operations, including water sources, pumps, storage tanks, treatment units, filtration plants, records of water monitoring, and future needs.

Certification of Water System Operators

The purpose of certification is to help ensure that water systems are run by competent, well-trained people even as changes in technology, industry, and population growth create new challenges for them. To retain their certification, operators must get relevant continuing education on a regular schedule.

During 2002, there were 320 operators newly certified through the state program. As of the end of the year, 96% of Group A water systems were in compliance with at least one certified operator on staff.

The division provided six training courses in 56 locations to more than 1,400 small water system operators. Our highest priority for training is providing courses to smaller systems to help them meet new requirements of the Safe Drinking Water Act.

New Regulations

During 2002, the division developed important new regulations in several areas to bring the state into compliance with federal requirements. These are taking effect in 2003. They include:

Surface water treatment. Affects systems that use surface water (lakes and streams) and serve 10,000 or more persons. This will help protect the public from microbial contaminants by requiring enhanced treatment of surface water.

Filter backwash recycling. Affects about nine systems that recycle direct, conventional, or in-line filtration water. The purpose is to assess and change, where needed, recycle practices for improved contaminant control, particularly of microbial contaminants.

Disinfection by-products. Affects Group A systems that add chlorine or ozone to drinking water. This will help reduce the creation of possible cancer-causing by-products of disinfection.

Lead and copper. Affects all community and NonTransient Non-Community water systems—about 2,530 systems. This will require systems to demonstrate optimal corrosion control and will simplify public education requirements.

Radionuclides. Affects all Group A community water systems—about 2,350 systems. Sets a new uranium maximum contaminant level and changes some monitoring location requirements.

Looking Ahead

Our primary goals for 2003 are mainly related to the activities on which we concentrated during 2002. They include:

- Being positioned and ready to respond to public health emergencies in a timely and competent manner.
- Having competent, well trained operators overseeing the public water system operations in Washington.
- Conducting sanitary surveys and working with water purveyors to identify and correct deficiencies.
- Taking action to address cross connections and prevent backflow incidents.
- Working with utilities to enhance the efficient and responsible use of state water resources.

We look forward to continuing to work in partnership with communities to provide save drinking water for people in Washington.

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DOH PUB. #331-229